

***What is claimed is:***

1. An isolated nucleic acid molecule comprising a polynucleotide at least 95% identical to a sequence selected from the group consisting of:
  - (a) a nucleotide sequence encoding the complete M-CIF polypeptide in Figure 2 (SEQ ID NO:2).
  - (b) a nucleotide sequence encoding the mature M-CIF polypeptide at positions 20-93 in Figure 2 (SEQ ID NO:2);
  - (c) a nucleotide sequence encoding the complete M-CIF polypeptide encoded by the cDNA clone contained in ATCC Deposit No. 75572;
  - (d) a nucleotide sequence encoding the mature M-CIF polypeptide encoded by the cDNA clone contained in ATCC Deposit No. 75572; and
  - (e) a nucleotide sequence complementary to any of the nucleotide sequences in (a), (b), (c), or (d).
2. An isolated nucleic acid molecule comprising a polynucleotide which hybridizes under stringent conditions to a polynucleotide consisting of nucleotide sequence in (a), (b), (c), (d), or (e) of claim 1.
3. An isolated nucleic acid molecule comprising a polynucleotide which encodes an epitope-bearing portion of an M-CIF polypeptide in (a), (b), (c), or (d) of claim 1.
4. An isolated nucleic acid molecule comprising a polynucleotide encoding an epitope-bearing portion of M-CIF selected from the group consisting of: amino acid residues from about 20 to about 36 in Figure 2 (SEQ ID NO:2); amino acid residues from about 42 to about 52 in Figure 2 (SEQ ID NO:2); amino acid residues from about 52 to about 64 in Figure 2 (SEQ ID NO:2); amino acid residues from about 67 to about 75 in Figure 2 (SEQ ID NO:2); amino acid residues from about 75 to about 84 in Figure 2 (SEQ ID NO:2); and amino acid residues from about 86 to about 93 in Figure 2 (SEQ ID NO:2).
5. A method for making a recombinant vector comprising inserting an isolated nucleic acid molecule of claim 1 into a vector.

6. A recombinant vector produced by the method of claim 5.
7. A method of making a host cell comprising introducing the recombinant vector of claim 6 into a host cell.
8. A host cell produced by the method of claim 7.
9. A method for producing an M-CIF polypeptide, comprising culturing the host cell of claim 8 under conditions such that said polypeptide is expressed and recovering said polypeptide.
10. An isolated M-CIF polypeptide comprising an amino acid sequence at least 95% identical to a sequence selected from the group consisting of:
  - (a) the complete amino acid sequence in Figure 2 (SEQ ID NO:2);
  - (b) amino acids 20-93 in Figure 1 (SEQ ID NO:2);
  - (c) the complete amino acid sequence encoded by the cDNA clone contained in ATCC Deposit No. 75572;
  - (d) the mature M-CIF polypeptide encoded by the cDNA clone contained in ATCC Deposit No. 75572; and
  - (e) the amino acid sequence of an epitope-bearing portion of any one of the polypeptides of (a), (b), (c), or (d).
11. An isolated polypeptide comprising an epitope-bearing portion of M-CIF, wherein said portion is selected from the group consisting of: amino acid residues from about 20 to about 36 in Figure 2 (SEQ ID NO:2); amino acid residues from about 42 to about 52 in Figure 2 (SEQ ID NO:2); amino acid residues from about 52 to about 64 in Figure 2 (SEQ ID NO:2); amino acid residues from about 67 to about 75 in Figure 2 (SEQ ID NO:2); amino acid residues from about 75 to about 84 in Figure 2 (SEQ ID NO:2); and amino acid residues from about 86 to about 93 in Figure 2 (SEQ ID NO:2).
12. An isolated antibody that binds specifically to an M-CIF polypeptide of claim 10.

13. A method of attracting T lymphocytes in an individual, comprising administering to said individual an effective amount of an isolated M-CIF polypeptide of claim 10.

14. The method of claim 13, wherein said individual is a human.

15. A method of inhibiting proliferation or differentiation of myeloid progenitor cells in an individual, comprising administering to an individual in need thereof an effective amount of a polypeptide selected from the group consisting of:

(a) a Myeloid Progenitor Inhibitory Factor-1 (MPIF-1) N-terminal deletion mutant comprising an amino acid sequence of SEQ ID NO:4 having a deletion of at least the first 33 N-terminal amino acid residues but not more than the first 53 N-terminal amino acid residues of SEQ ID NO:4;

(b) a MPIF-1 C-terminal deletion mutant comprising an amino acid sequence of SEQ ID NO:4 having a deletion of at least the last 15 C-terminal amino acid residues but not more than the last 52 C-terminal amino acid residues of SEQ ID NO:4, wherein the N-terminal amino acid residue of said MPIF-1 C-terminal deletion mutant is amino acid residue 1 (Met) or 22 (Arg) of SEQ ID NO:4;

(c) a MPIF-1 N-terminal and C-terminal deletion mutant comprising an amino acid sequence of SEQ ID NO:4 having a deletion of at least the first 33 N-terminal amino acid residues but not more than the first 53 N-terminal amino acid residues of SEQ ID NO:4 and a deletion of at least the last 15 C-terminal amino acid residues but not more than the last 52 C-terminal amino acid residues of SEQ ID NO:4;

(d) a polypeptide having an amino acid sequence at least 95% identical to the amino acid sequence of said MPIF-1 deletion mutant of (a);

(e) a polypeptide having an amino acid sequence at least 95% identical to the amino acid sequence of said MPIF-1 deletion mutant of (b);

(f) a polypeptide having an amino acid sequence at least 95% identical to the amino acid sequence of said MPIF-1 deletion mutant of (c);

(g) a polypeptide having an amino acid sequence identical to the amino acid sequence of said MPIF-1 deletion mutant of (a) except for at least one amino acid substitution;

(h) a polypeptide having an amino acid sequence identical to the amino acid sequence of said MPIF-1 deletion mutant of (b) except for at least one amino acid substitution; and

(i) a polypeptide having an amino acid sequence identical to the amino acid sequence of said MPIF-1 deletion mutant of (c) except for at least one amino acid substitution.

16. The method of claim 15, wherein said individual is human.

17. An isolated polypeptide selected from the group consisting of:

(a) a Monocyte Colony Inhibitory Factor (MCIF) N-terminal deletion mutant comprising an amino acid sequence of SEQ ID NO:2 having a deletion of at least the first 20 N-terminal amino acid residues but not more than the first 40 N-terminal amino acid residues of SEQ ID NO:2;

(b) a M-CIF C-terminal deletion mutant comprising an amino acid sequence of SEQ ID NO:2 having a deletion of at least the last C-terminal amino acid residue but not more than the last 25 C-terminal amino acid residues of SEQ ID NO:2, wherein the N-terminal amino acid residue of said M-CIF C-terminal deletion mutant is amino acid residue 1 (Met) or 20 (Thr) of SEQ ID NO:2;

(c) a M-CIF N-terminal and C-terminal deletion mutant comprising an amino acid sequence of SEQ ID NO:2 having a deletion of at least the first 20 N-terminal amino acid residues but not more than the first 40 N-terminal amino acid residues of SEQ ID NO:2 and a deletion of at least the last C-terminal amino acid residue but not more than the last 25 C-terminal amino acid residues of SEQ ID NO:2;

(d) a polypeptide having an amino acid sequence at least 95% identical to the amino acid sequence of said M-CIF deletion mutant of (a);

(e) a polypeptide having an amino acid sequence at least 95% identical to the amino acid sequence of said M-CIF deletion mutant of (b);

(f) a polypeptide having an amino acid sequence at least 95% identical to the amino acid sequence of said M-CIF deletion mutant of (c);

(g) a polypeptide having an amino acid sequence identical to the amino acid sequence of said M-CIF deletion mutant of (a) except for at least one amino acid substitution;

(h) a polypeptide having an amino acid sequence identical to the amino acid sequence of said M-CIF deletion mutant of (b) except for at least one amino acid substitution; and

(i) a polypeptide having an amino acid sequence identical to the amino acid sequence of said M-CIF-1 deletion mutant of (c) except for at least one amino acid substitution.

18. A method of treating an individual comprising administering to the individual an effective amount of the polypeptide of claim 17, wherein said polypeptide is administered for an indication selected from the group consisting of: (a) myeloprotection; (b) inhibiting growth of hematopoietic progenitor cells; (c) treating sepsis; (d) suppression of TNF- $\alpha$  production; (e) treating renal injury; (f) treating arthritis or joint inflammation; (g) treating enterocolitis; (h) treating lupus.

19. An isolated MPIF-1 polypeptide consisting of a member selected from the group consisting of:

- (a) amino acid residues 1 to 79 of SEQ ID NO:59;
- (b) amino acid residues 60 to 137 of SEQ ID NO:11;
- (c) amino acid residues 46 to 137 of SEQ ID NO:11;
- (d) amino acid residues 1 to 85 of SEQ ID NO:60; and
- (e) amino acid residues 54 to 137 of SEQ ID NO:11.